

## Introduction

To answer questions related to the vitamin A situation in the country, I had to contact the Federal Ministry of Health, so as to have the general understanding on guidelines available and if there is any system in place. Moreover, I contacted also regional health bureaus to have clarity on the operational level of their situation and actual implementation. Hence, telephone conversation conducted with Tigray health bureau nutrition expert, Mr. Tsega Thehail (telephone no. +251 344 408 651), and Amhara Health Bureau information expert, Mr. Moges Asres (Telephone no. + 251 582 203 458)

On the one to one discussion with the Federal Ministry Of Health, Nutrition Case team coordinator, Mr. Birara Melese (email: [nutritoncoordinator.mchn2007@gmail.com](mailto:nutritoncoordinator.mchn2007@gmail.com) telephone no.+ 251 913 291 992) focused on the important findings that are more related to micronutrient deficiencies in which Vitamin A deficiency is the most chronic problem in the country along with deficiency of Iodine, Zinc and Iron.

Generally, he believes that micronutrient is the major chronic problem of the northern part of the country which includes Tigray, Afar, and Amhara regions, but it is also not less in Oromia region. However, drought and emergency situations at different seasons and time exacerbates the deficiency quite above normal even to other regions of the country as well.

Though there is no separate study on Vitamin A alone, micronutrients all together which includes vitamin A survey conducted at federal level from time to time.

The micronutrients survey is done every 2 to 5 years. Moreover, it is followed up regularly both through the Health extension system (more of administrative) and the Regular health system (Professional works).

The Health extension system encompasses: one to five individuals community health net work in each village to a Health Post then to District, Zone, Region Health Offices/ Bureau.

The regular health system follows the positioned Health management information system from Kebele level -Health post to District level - Primary Health to Zone level - Health station then to Regional - Hospital. So in the two wheeled follow up system an abnormal or outbreak situation can easily be detected for a response.

The step by step discussion led us to reference which has detailed survey data as ground for further understanding.

## Recent survey primary results:

According to the recent survey (2014/ 15) conducted by Ethiopian Public Health Institute, Vitamin A deficiency is categorized in to:

### **A, Women's of reproductive age**

The national prevalence of vitamin A deficiency among women’s of reproductive age was found 3.4 %. Among the regions the prevalence of vitamin A deficiency of women who live in Harari is the highest as compared to other regions. The analysis based on the area of residence showed that the rural woman has the highest prevalence as compare to the urban women. Furthermore the older women in the age range of 40-49y were found with the highest prevalence

**Table1. Prevalence of vitamin A deficiency among Ethiopian women’s of reproductive age by region, age and area of residence**

		N	Mean±SD	% (Retinol <0.7 µmol/l)
<b>National</b>		<b>1619</b>	<b>1.47±0.45</b>	<b>3.4</b>
Age (Year)	15.19	309	1.40±0.43 <sup>a</sup>	3.2
	20.29	605	1.44±0.45 <sup>a</sup>	3.8
	30.39	475	1.52±0.45 <sup>b</sup>	2.9
	40.49	230	1.51±0.47 <sup>b</sup>	3.5
Residence	Urban	577	1.50±0.47 <sup>b</sup>	2.3
	Rural	1042	1.45±0.44 <sup>a</sup>	4.0
<b>Tigray</b>		<b>174</b>	<b>1.50±0.44<sup>c,d</sup></b>	<b>3.4</b>
Afar		103	1.51±0.44 <sup>c,d</sup>	1.0
Amhara		231	1.53±0.43 <sup>c,d</sup>	0.4
<b>Oromiya</b>		<b>241</b>	<b>1.35±0.44<sup>a,b</sup></b>	<b>5.8</b>
Somali		101	1.42±0.38 <sup>a,b,c</sup>	2.0
Region	B/G	105	1.45±0.41 <sup>b,c</sup>	1.9
<b>SNNPR</b>		<b>194</b>	<b>1.53±0.49<sup>c,d</sup></b>	<b>4.6</b>
Gambella		110	1.49±0.36 <sup>c,d</sup>	1.8
<b>Harari</b>		<b>90</b>	<b>1.34±0.42<sup>a,b</sup></b>	<b>5.6</b>
<b>Addis/A</b>		<b>173</b>	<b>1.59±0.54<sup>d</sup></b>	<b>4.6</b>

Dire/D	97	1.30±0.38 <sup>a</sup>	5.2
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Source: Ethiopian national Micronutrient Survey, by Ethiopian Public Health Institute 2014/2015

## B. School age Children

The national prevalence of vitamin A deficiency among **school age children** was found 10.9%. Among the regions the prevalence of vitamin A deficiency of school age children who live in Harari is the highest as compared to other region at a prevalence of 25.0%. And lowest prevalence was observed in Addis Ababa, almost all children in this region is free of vitamin a deficiency. The analysis based on the sex difference showed that the vitamin A deficiency prevalence is higher in school age boys than girls. Furthermore higher prevalence was observed in the school age children's in the age range of 5.8y.

**Table2. Prevalence of vitamin A deficiency among school age children by region, age and sex category**

		N	Mean±SD	% (Retinol <0.7 µmol/l)
<b>National</b>		<b>1555</b>	<b>1.10±0.37</b>	<b>10.9</b>
Age (Year)	5.8	705	1.04±0.37 <sup>a</sup>	13.3
	9.11	438	1.09±0.35 <sup>a</sup>	11.4
	12.14	412	1.20±0.35 <sup>b</sup>	6.3
Sex	Boys	732	1.08±0.38 <sup>a</sup>	11.9
	Girls	823	1.12±0.36 <sup>b</sup>	10.1
<b>Tigray</b>		<b>193</b>	<b>1.13±0.38<sup>b,c</sup></b>	<b>10.4</b>
Afar		149	1.16±0.36 <sup>c</sup>	5.4
Amhara		225	1.13±0.32 <sup>b,c</sup>	8.0
<b>Oromiya</b>		<b>253</b>	<b>1.1±0.38<sup>a,b,c</sup></b>	<b>14.2</b>
Somali		128	1.1±0.35 <sup>a,b,c</sup>	5.5
Region	B/G	99	1.15±0.32 <sup>b,c</sup>	10.1

SNNPR	205	1.03±0.37 <sup>a,b</sup>	18.0
Gambella	112	1.1±0.29 <sup>a,b,c</sup>	4.5
Harari	60	0.99±0.34 <sup>a</sup>	25.0
Addis/A	28	1.45±0.58 <sup>d</sup>	.0
Dire/D	103	1.04±0.38 <sup>a,b</sup>	13.6

Source: Ethiopian national Micronutrient Survey, by Ethiopian Public Health Institute 2014/2015

### C. Preschool Children

**Table 3. Prevalence of vitamin A deficiency among preschool children by region, age and sex category**

		N	Mean±SD	% (Retinol <0.7 µmol/l)
National		1148	1.01±0.33	13.9
Age (Month)	6.11	76	1.05±0.65 <sup>a</sup>	18.4
	12.23	190	1.02±0.32 <sup>a</sup>	13.7
	24.35	257	1.02±0.32 <sup>a</sup>	12.1
	36.47	296	0.99±0.27 <sup>a</sup>	14.2
	48.59	329	1.00±0.29 <sup>a</sup>	14.3
Sex	Boys	586	0.99±0.29 <sup>a</sup>	16.6
	Girls	562	1.03±0.36 <sup>b</sup>	11.2
Tigray		153	1.11±0.50 <sup>b,c</sup>	11.1
Afar		86	0.10±0.30 <sup>a,b</sup>	17.4
Amhara		146	1.06±0.30 <sup>a,b</sup>	10.3
Oromiya		208	0.95±0.29 <sup>a</sup>	15.9
Somali		85	0.98±0.26 <sup>a,b</sup>	12.9

Region	B/G			
		91	1.07±0.33 <sup>a,b</sup>	13.2
	SNNPR	165	0.98±0.29 <sup>a,b</sup>	13.3
	Gambella	91	0.95±0.25 <sup>a</sup>	15.4
	Harari	62	0.97±0.31 <sup>a</sup>	21.0
	Addis/A	10	1.23±0.40 <sup>c</sup>	0.0
	Dire/D	51	0.94±0.25 <sup>a</sup>	15.7

Source: Ethiopian national Micronutrient Survey, by Ethiopian Public Health Institute 2014/2015

The prevalence of Vitamin A deficiency among school age children was found 10.9% at a national level. Hence based on WHO classification, this prevalence can be categorized as a moderate public health problem in Ethiopia. Likewise the prevalence of Vitamin A deficiency can be considered as a moderate public health problem in all regions, except Harari and Addis Ababa. Vitamin A deficiency is a severe public health problem among the Harar school age children at a prevalence of 25%. On the other hand vitamin A deficiency is not a public health problem among the Addis Ababa school age children. The prevalence of Vitamin A deficiency of both school age boys and girls as well as among all age categories can be categorized as a moderate public health problem.

The prevalence of Vitamin A deficiency among preschool children was found 13.9% at a national level. Hence based on WHO classification, this prevalence can be categorized as a moderate public health problem in Ethiopia. Likewise the prevalence of Vitamin A deficiency can be considered as a moderate public health problem in all regions, except Harari and Addis Ababa. Vitamin A deficiency is a severe public health problem among the Harar preschool children at a prevalence of 21%. On the other hand vitamin A deficiency is not a public health problem among the Addis Ababa preschool children. The prevalence of Vitamin A deficiency of both school boys and girls as well as among all age categories can be categorized as a moderate public health problem.

Further, the federal level gives an emphasis on the importance of

1. Consumption of Vitamin A rich food to be promoted through improving availability through production, processing, preservation, pricing and marketing of such foods.
2. Nutrition specific education to be promoted to reduce micronutrient deficiency.
3. Food fortification and supplementation to be considered as a mechanism of intervention to reduce deficiency.
4. Dietary inadequacy of consumed nutrients, low bioavailability of key micronutrient from plant based diets and infections are the major contributing factors for deficiency.

## Finally, to answer your specific questions:

### 1. What is the Vitamin A situation among children in Tigray compared to parts of Amhara or Oromia?

As usual, comparing regions to region on many factors these days remain sensitive; however, following the recent study on the prevalence of vitamin A deficiency among women of productive age being the national average is 3.4 %. Tigray is the same to that of the national average which is 3.4% whilst five regions are above the national average: Oromia 5.8%, Harari 5.6%, Dire Dawa 5.2% , SNNPR and Addis Ababa are on the same level with 4.6%.

When it comes to school age children: the national prevalence of Vitamin A deficiency among school age children was found 10.9%. In Tigray the prevalence of Vitamin A deficiency is a little better than the national figure with 10.4% whilst other four regions have a little worse figures which is above the national average. Such as Harari 25%, SNNPR 18 % Oromia 14.2 %, and Dire Dawa 13.6 %.

In regard to Preschool Children: the national prevalence of Vitamin A deficiency among preschool children was found 13.9%. Tigray is with 11.1% which is better than national level. However, five of the other regions have the worse figures. Like – Harari with 21%, Afar 17.4%, Oromia 15.9% Gambella 15.4%, and Dire Dawa 15.7%.

### 2. From where do the health authorities get information about Vitamin A deficiency?

Authorities get regular information both 1. From the regular health management information system in which vitamin A deficiency is the one to be reported along with other micronutrient via Health post, primary health centre, Health Station, Regional hospital and Federal hospital. And 2. Through the Health extension system: District, Zone, Region, and Federal health offices/ Bureau.

### 3. What is being done to improve the vitamin A situation?

At the federal government, It seems that there is an understanding and commitment to improve the situation with the establishment of National Nutrition Programme and Integrating nutrition programme for diversified and sufficient productions and the education sector to work on improving awareness and engage in school feeding programme. Moreover, social mobilization and periodical campaign conducted for supply of vitamin A capsule, Deworming and improved vaccination coverage for the

most vulnerable parts of the communities with special focus for children who are 6 – 59 months old children.

In Tigray, on the top of periodical follow on regular campaigns for Vitamin A capsule provision, with the support of Tigray Agriculture research Institute, a new variety of Potato called “ Orange fleshy Sweet potato” is on an introduction phase believed to have high vitamin A content. Though the plantation is ongoing, behavioral change on the consumption behavior among community is not yet confirmed.

In Amhara, the regular community mobilization and periodical campaigns are on going to improve Vitamin A capsule provision and coverage both through the health extension system and the regular health system.

In conclusion, in Ethiopia micronutrient deficiency including Vitamin Continue to be a major health problem, and children and women are among the groups at most risk. Further, chronic food deficit being common both in Afar, Amhara and Tigray so true to deficiency of vitamin A. though periodical abnormalities following drought and emergency crises are also common in Oromia, Gambella, Dire Dawa, Harari and SNNPR that causes deficiency of vitamin A to a higher extent.